

April 8, 2010

*(via electronic filing)*

Marlene H. Dortch  
Secretary  
Federal Communications Commission  
The Portals  
445 12th Street, S.W.  
Washington, D.C. 20554

Re: **Ex Parte Communication**

WT Docket No. 03-66: Amendment of Parts 1, 21, 73, 74 and 101 of the Commission's Rules to Facilitate the Provision of Fixed and Mobile Broadband Access, Educational and Other Advanced Services in the 2150-2162 and 2500-2690 MHz Bands

Dear Ms. Dortch:

On April 7, 2010, the following individuals met to discuss the above-referenced proceeding.

Name	Organization	Title
Ruth Milkman	FCC, WTB	Bureau Chief
John Leibovitz	FCC, WTB	Deputy Bureau Chief
Blaise Scinto	FCC, WTB, Broadband	Division Chief
John Schauble	FCC, WTB, Broadband	Deputy Division Chief
Nancy Zaczek	FCC, WTB, Broadband	Attorney Advisor
Fred Campbell	WCAI	President & CEO
David Moore	CTN	President
Edwin Lavergne	Fish & Richardson	Counsel to CTN
Steve Gorski	NEBSA	Secretary of the Board
Todd Gray	Dow Lohnes	Counsel to NEBSA
Cathy Massey	Clearwire	VP, Regulatory Affairs and Public Policy
Erin Boone	Clearwire	Corporate Counsel - Regulatory Affairs
Nadja Sodos-Wallace	Clearwire	Senior Corporate Counsel - Regulatory Affairs
William Wallace	DigitalBridge	Executive Vice President
Mark Pagon	Xanadoo	CEO
Cheryl Crate	Xanadoo	Senior Vice President

April 8, 2010  
Page 2

The attendees discussed the attached presentation as well as the status of the EBS "white spaces" proceeding.

This letter is being filed electronically pursuant to Section 1.1206 of the Commission's Rules. Please contact me if you have any questions.

Very truly yours,

A handwritten signature in dark ink, appearing to be "FBC", followed by a horizontal line extending to the right.

Fred B. Campbell, Jr.  
President and CEO  
WCAI

e-copy: meeting participants



# Update on 4G Broadband Deployment in the 2.5 GHz Band

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**Catholic  
Television  
Network**



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## Key Message: The Rules Are Working

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- Despite the recession, BRS/EBS licensees have invested *billions of dollars* in network deployment
- Public-private partnerships between BRS and EBS licensees are yielding enormous benefits to educational institutions throughout the country
- The band is providing much-needed spectrum depth and competition in wireless broadband
- The band is well-suited for use in rural areas



## Brief History of the 2.5 GHz Band

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- The band has a long history of partnerships between educational and commercial licensees
- Today's licensees have done what others could not – assemble a vast collection of educational and commercial spectrum to maximize deployment for the benefit of commercial and educational users
- Despite the economic downturn, BRS/EBS licensees have invested *billions of dollars* in network deployment in the last two years



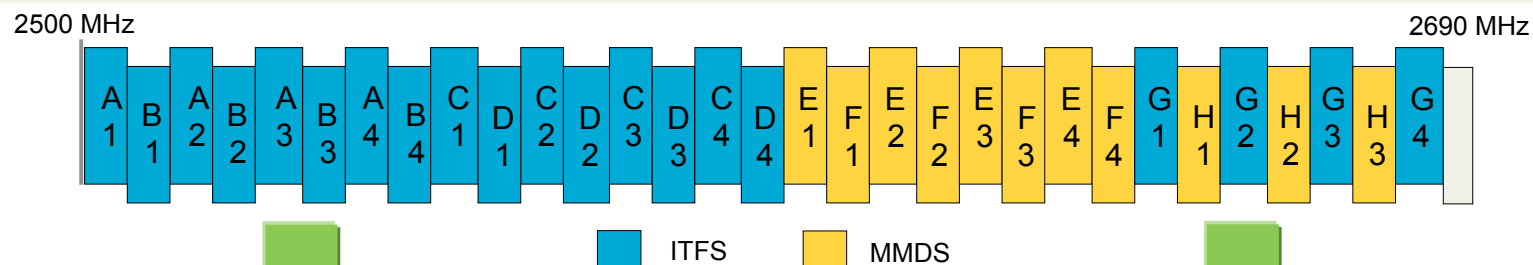
## Key to Success: FCC Reconfiguration of the Band for Advanced Broadband Services

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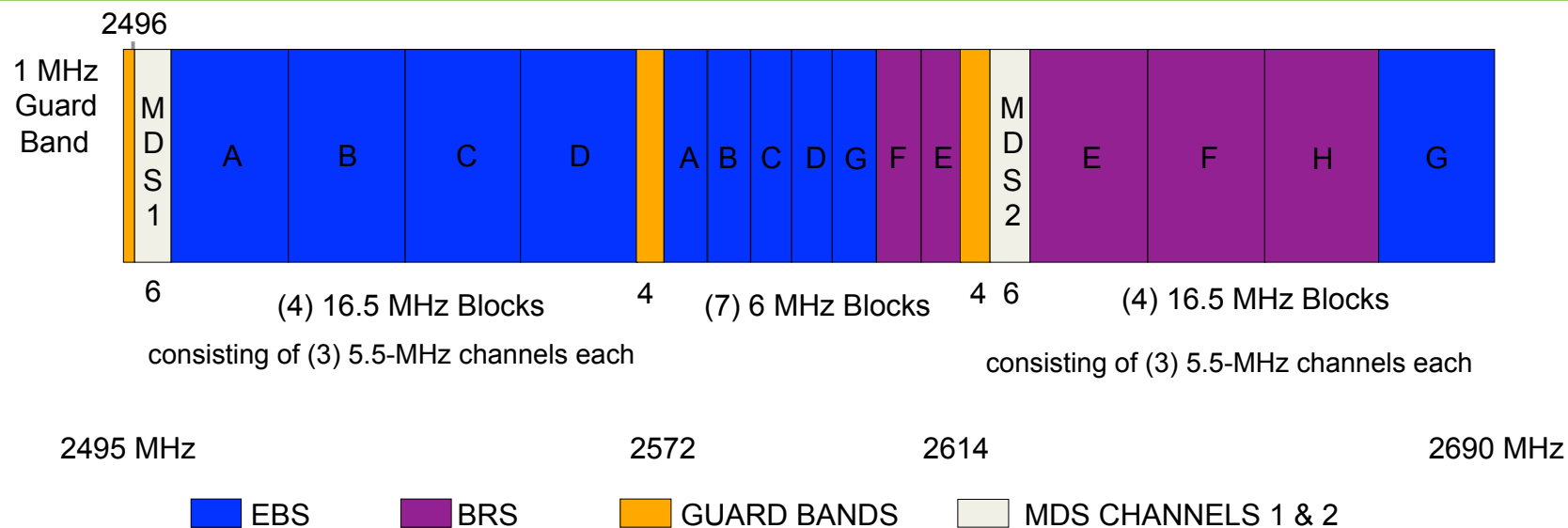
- 2002 – WCAI, NEBSA and CTN filed a white paper with the FCC urging rules revisions to the ITFS and MDS services to promote advanced wireless services
- 2005 – FCC reconfigured the band and revised its technical rules to promote *technology neutral* broadband deployment
- Transition to the new band plan is now nearly complete and deployment is flourishing in the band
- As a result, educational institutions and consumers generally are realizing the benefits of 4G wireless broadband networks today

# 2.5GHz Band in the U.S.

## MMDS / ITFS Channel Bands Prior to Adoption of New Rules (1/05)



## EBS / BRS Channel Bands





# The Face of the 2.5 GHz Band Today

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- **WCAI** – *International, nonprofit, technology-neutral trade association that seeks to establish governmental environments favorable to the wireless broadband industry*
- **NEBSA** – *Professional association for those institutions who hold EBS licenses, including members from K12, post secondary and other education-related non-profit entities*
- **CTN** – *Association of over a dozen Archdioceses and Dioceses that operate many of the largest parochial school systems in the U.S. including New York, Los Angeles, Chicago, and Detroit*
- **Clearwire** – *largest spectrum holder and lessee of 2.5 GHz spectrum providing a robust suite of advanced high-speed Internet services to consumers and businesses*
- **Digital Bridge Communications** – *provides broadband wireless to small and medium-sized communities of up to 150,000 people nationwide through the WiMAX technology standard*
- **Xanadoo** --*provides innovative, mobile broadband solutions in multiple cities in TX, OK and IL using 2.5 GHz spectrum*





# **Catholic Television Network**



# EBS Licensees

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There are over 2,000 EBS licenses authorized by the FCC to approximately 1,300 educational entities throughout the United States:

- state government agencies
- state universities and university systems
- public community and technical colleges
- private universities and colleges
- public elementary and secondary school districts
- private schools (including Catholic school systems)
- public television and radio stations
- hospitals and hospital associations
- other non-profit educational entities



## M-Learning Is Part of E-Learning

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- “Specific to education, more and more, online applications now have a mobile counterpart.”
  - *Source: Horizon Report 2010*
- Students form one of the fastest-growing segments of mobile device users
- Practitioners Report Academic Improvement
  - Higher attendance rates
  - Lower drop out rates



## EBS Spectrum Enables M-Learning

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- EBS spectrum enables transmission of data, voice and video communications to further the educational mission of accredited schools, colleges and universities
- EBS utilizes the *only* spectrum licensed by the FCC exclusively to educators for educational purposes



# Public-Private Partnerships Are Key to the Success of EBS

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- EBS partners are already benefiting from wide area 4G networks
  - 4G services have been deployed in more than 40 markets
  - Commercial operators plan to continue these efforts as they launch additional markets in 2010 (covering up to 120 million people by year-end)
  - Strategic partnerships among commercial and educational licensees provide critical financial, technical, and other resources for education



## Examples of BRS/EBS Partnerships

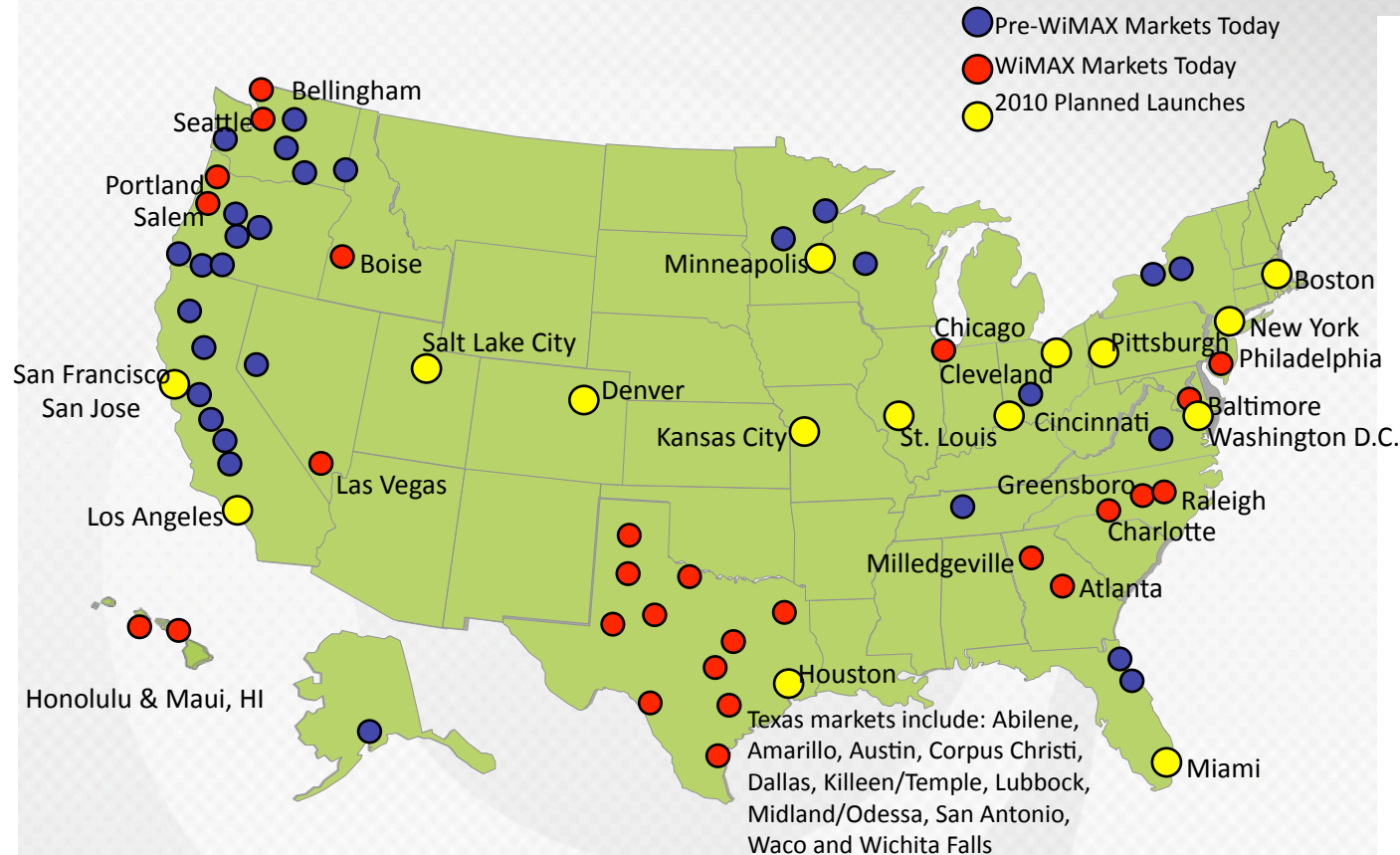
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- **Archdiocese of Los Angeles** – New technologies and educational initiatives have been made possible as a result of spectrum leasing arrangement between the Archdiocese of Los Angeles and Clearwire
- **Clark County School District Virtual High School, Las Vegas** – Provides students with online resources, curriculum and virtual staff to assist them in completing their high school diplomas
- **Atlanta Public Schools** – AVID program prepares capable high school students who are falling short of their potential for college by providing access to technology and online educational resources

CLEAR™



# 2010 CLEARWIRE 4G Deployment (partial)



## 2010 Announced Launches:

- Boston
- Houston
- Kansas City
- New York
- San Francisco / San Jose
- Washington D.C.
- Denver
- Minneapolis
- Los Angeles
- Miami
- St. Louis
- Cincinnati
- Cleveland
- Pittsburgh
- Salt Lake City

- 44.1MM POPs at the end of 2009
- 120MM POPs expected at the end of 2010

Source: Company filings

14 Note: Company has initiated deployment for 75MM POPs by 2010; goal is to cover 120MM POPs by 2010 which may be adjusted depending on availability of capital and experience in launched markets



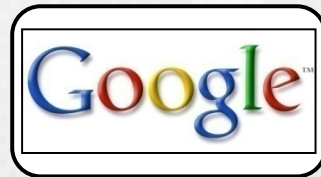
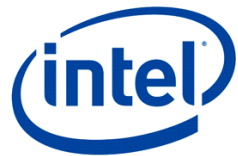
# Beneficial Relationships With Strategic Partners

## MVNOs



- Access to 100MM+ customers
- Additional revenues and cash flow
- Sprint
  - 3G/4G dual handsets
  - Leverage infrastructure and enterprise sales force

## Other Founding Partners



- Intel
  - Embedded WiMAX chipsets
- Google
  - Open architecture devices
  - Advertising revenue sharing

## EBS Licensees

- National Educational Licensees
- Statewide University Systems
- Private Universities
- Community Colleges
- Public and Parochial School Districts

- Spectrum Leases
- Mobile Broadband Educational Services Partnerships
- Community-based educational and outreach initiatives

## Spectrum Depth Drives Enhanced Services and New Capabilities

### 30 MHz

2-4 Mbps  
end user experience

Mobile VoIP service

Ancillary services: Email,  
IM, Push to x, etc

Mobile broadcast video  
(~20 channels)

Video Streaming for  
Educational Services

### 60 MHz

4-6 Mbps  
end user experience

High speed Video on demand  
(VOD) for educational  
services

Mobile Video Conferencing

Advanced telematics and  
vehicle infotainment

Mobile broadcast video (~40  
channels)

### 120 MHz

6-15 Mbps  
end user experience

HD VOD for educational  
applications

CD-quality streaming audio

Massively Multiplayer Online  
Gaming (MMOG)

Heavy User & Player  
Created Content

Mobile broadcast video  
(~90 Channels)

# Clearwire 4G Customer: faster speeds = greater usage

Average Clearwire Mobile Tonnage

=

7 GigaBytes/sub/mos

Average 3G Data Card<sup>(1)</sup>

=

1.4 GigaBytes/mos

Average Smartphone Usage<sup>(2)</sup>

=

200 MByte/mos

Watch DVD quality movie on Netflix.com<sup>(3)</sup>

=

4.7 GigaBytes

Listen 30 minutes a day to Pandora<sup>(3)</sup>

=

1.2 GigaBytes/mos

4G has 4x to 8x greater usage than 3G  
WiMAX has 2x greater usage than preWiMAX

(1) Q3 2009 ComScore Data  
(2) Nielsen Research Q4 2009  
(3) Cisco Report

# CLEARWIRE 2009 Recap

Successful launch of CLEAR 4G service in 27 markets across the U.S., including major cities such as Chicago, Dallas, Las Vegas, Atlanta, Philadelphia, Seattle and Honolulu.

Total Covered 4G POPs exceeded 34 million at the end of 2009 with overall Covered POPs exceeding 44 million.

Added 87,000 net new subscribers during Q4 '09, largest net add quarter in Company's history, bringing total Clearwire's subscriber base to 688,000; CLEAR 4G subscribers doubled sequentially to end the year at 438,000.

2009 revenue increased 19% to \$274.5 million compared with Pro Forma 2008 revenue.

4G wholesale partners have launched service in all CLEAR markets with the wholesale subscriber base at 46,000 from net adds in late 2009.

Raised \$4.3Bn, including \$1.6Bn of new equity investment from Sprint, Comcast, Time Warner Cable, Intel, Eagle River and Bright House Networks priced at \$7.33/share, and refinancing of 12% Senior Secured Notes which extended maturity to late 2015.



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**Bringing 4G Broadband to Underserved and  
Rural Regions**

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## 2.5 GHz is particularly well suited to serve rural areas



- DigitalBridge was founded to bring 4G WiMAX services to underserved mid-sized and rural communities
- Secured 2.5 GHz spectrum footprint covering 7.9mm POPs, with an average depth of 75 MHz
- Built modular back office systems with standards-based interfaces to permit rapid integration with other systems
- Serve 15 markets in IN, ID, MT, SD, VA and WY covering over 600,000 POPs:
  - Upgraded 12 markets to 802.16e mobile WiMAX capability
  - Majority of markets EBITDA positive
- Two rural markets—Appomattox, VA and Rexburg, ID—have penetration rates exceeding 35%



2009 Innovation Achievement Award

## 2.5 GHz will play an important role in stimulus efforts



- ✓ DBC has applied for \$150 million to deploy WiMAX services in 30 rural communities across VA, IND, SC, TN, and MS
- ✓ Coverage of 1.5mm people and 81,000 businesses
- ✓ Affordable, next-generation broadband:
  - Speeds of 2-4Mbps now with roadmap to 12Mbps
  - Fixed and WiMAX-enabled mobile devices (e.g., netbooks)
  - Prices from \$30-\$35 per month
- ✓ Fast deployments: 9 months
- ✓ Free broadband access for libraries and other community institutions
- ✓ Wholesale option available for other local operators
- ✓ Quantifiable jobs and economic development delivering jobs in:
  - Network deployment and construction
  - Local sales and marketing
  - Home-based call center agents
- ✓ Cost-effectiveness
  - Maximum number of constituencies receiving broadband per network dollar (at an average of \$240 per household, 5-20x households served per network dollar vs. wireline deployments)
  - Ability to meet RUS financial targets on a standalone basis

The logo for Xanadoo is rendered in a vibrant, multi-colored, 3D-style font. The letters are 'X', 'a', 'n', 'a', 'd', 'o', and 'o'. The 'X' is red, the first 'a' is yellow, the 'n' is green, the second 'a' is blue, the 'd' is pink, the third 'o' is orange, and the final 'o' is purple. Each letter has a glossy, reflective surface and a slight shadow beneath it, giving it a three-dimensional appearance. A registered trademark symbol (®) is located at the top right of the final 'o'.

Xanadoo®

wireless high-speed internet




## 4G: the Internet Made Ubiquitous

- ✓ Two Most Disruptive Technologies Since 1980...
  - Mobile voice (4.5 billion – 65% world population)
  - Internet (1.7 billion – 25% world population)
- ✓ Are Coalescing in 4G Wireless Networks ...
  - Spectral efficiency (bits per Hz per second)
  - Flat all IP networks
  - Low Cost (per bit delivered including IPR)
  - Spectrum Depth (in MHz per POP of licensed spectrum)
  - Build & extend on rich 3G apps ecosystem

23



## Xanadoo & 4G




**Driving WiMAX into America's Heartland**

visit [www.xanadoo.com/drivingWiMAX](http://www.xanadoo.com/drivingWiMAX) to see where we stop next

**Xanadoo**  
wireless high-speed internet

Today, we offer WiMAX-based broadband solutions to one million people and businesses in Texas, Oklahoma and Illinois and are the only WiMAX operator in North America selected to the Cisco Powered Program. In the future, we look forward to expanding our WiMAX networks to serve the almost 10 million people and businesses within our 2.5 GHz licensed footprint.



- ✓ Building & operating 4G networks since '06
- ✓ 6 current markets with 1 million covered POPs
- ✓ Cisco (beam-forming) RF & core network gear
- ✓ High capacity (200 Mb/s) wireless rings for backhaul
- ✓ Hold 2.5 GHz spectrum with ~13M licensed pops
- ✓ Upper 700 spectrum MHz with 156M licensed POPs

24



# Xanadoo Plans

## Postpaid

- ✓ 8 separate monthly plans
- ✓ Starting at \$14.95/mo.
- ✓ Speeds up to 3 to 5 Mb/s
- ✓ VoIP/Internet “double play” from \$39.95 per/mo.
- ✓ USB & dual mode (VoIP) CPE options
- ✓ “Everyday Low Pricing”



## Prepaid

- ✓ Similar to cellular prepaid
- ✓ Access cards provide from 7 to 90 days of access
- ✓ No credit checks
- ✓ No contracts
- ✓ “Speed Boost” can be purchased



25



## Subscriber Profile

### Young Value Seekers

- ✓ 62% < 34 yrs old
- ✓ 58% < \$35K HH Income
- ✓ 48% rent

### Wireless Lifestyle

- ✓ 43% select due to no phone or cable requirement
- ✓ 60% cell phone only
- ✓ 34% satellite TV subscribers

### Mobile & Transient Use

- ✓ 25% select for mobile use
- ✓ 35% select prepaid

*"When I saw Xanadoo and that I could get it as low as \$15.00 a month, I couldn't believe it."*

Thank you Xanadoo. You set me free!"

- Colleen, Abilene, TX

"I only use a cell phone and needed an internet service that didn't require a landline. And the cable company was too expensive. The *speed is exactly what I need and the price is perfect for my budget.* Thank you Xanadoo!"

- Jessica, Springfield, IL

"Xanadoo has been a life saver for me. The area where I use the internet does not have connectivity, *so I needed a wireless internet that would work anywhere.* The price and the speed of the service are phenomenal..."

- Chris, Lubbock, TX



# Thank You!

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